78-Ida-0539 (USFS Pathology Project Chatcolet #1)

Classification -- loamy-skeletal, mixed, frigid Dystric Xerochrept.

General Site Characteristics

Location -- Benewah County, Idaho, SE¼ of section 10, T.46N., R.3W., 65 meters uphill from the highway along Lake Benewah across road from the garbage can pull-out at the east end of Heyburn State Park; described -- September 14, 1978, by Tom Dechert and John Craighead; topography -- moderately rolling mountain foothills, side slope of a secondary ridge, straight to slightly convex position about one third up a 150 meter long slope; slope -- 40 percent; aspect -- southeast 130 degrees; elevation -- 670 meters (2200 feet); parent material -- colluvium and residuum of the striped peak formation, gray to green to purplish-red siltite altered to a punky and bleached rock of faded red to cream color; climate -- subhumid with cool dry summers and cool wet winters, mean annual precipitation of 65 cm. (25 in.), mean annual air temperature of 8.5° C. (47.5° F); drainage -- somewhat excessively well drained; runoff -- slight; permeability -- moderately rapid; erosion -- some due to logging and fire; vegetation and use -- Abies grandis - Pachistima myrsinites habitat type, with Pseudotsuga menziesii, Symphoricarpus alba, Pinus ponderosa, Holodiscus discolor, Rhamnus pushiana, Lonicera (sp.), Rosa (sp.) Physocarpus malvaceous, Berberis repens, Rubus parviflorus, Calamagrostis rubeseens, Festuca idahoensis, Fragoria virginiana, Coptis occidentalis, Galium triflorum, area used as a State Park.

Remarks: Climatic data are those of St. Maries and should be about the same at this site. This description is taken from a profile in the center of a Poria disease opening. The vegetation is in an early successional stage, apparently in a comeback from the 1910 fire. The lower parts of this hillslope have from 3 to 5 percent rock outcrops. The roadcut indicates that perhaps 10 percent of the area may have lithic soils. This site closely matches the modal Minaloosa Soil Series.

Pedon Description

O1 1-0 inches. Partially decomposed needles, twigs and leaves.

A11 3-4 inches. Dark grayish brown (10YR 4/2) very gravelly silt loam, very dark gray to black (10YR 2.5/1) moist; moderate, fine granular structure; friable, nonsticky and slightly plastic; many very fine, fine and medium pores; abundant, very fine, fine and medium roots; no clay films; no concretions; 84 percent gravel; an estimate of 10 percent cobbles; clear smooth boundary.

A12 4-9 inches. Dark grayish brown (10YR 4/2) very gravelly silt loam, dark brown (10YR 3/3) moist; moderate, fine granular structure; friable, slightly sticky and slightly plastic; many very fine, fine and medium interstitial pores; abundant, very fine, fine and medium roots; no clay films; no concretions; 84 percent gravel; gradual smooth boundary.

78-Ida-0539 (cont.)

B2 9-16 inches. Very pale brown to light yellowish brown (10YR 6.5/4) very gravelly silt loam, brown to dark brown (10YR 4/3) moist; moderate, fine subangular blocky breaking to a moderate, fine granular structure; friable, slightly sticky and slightly plastic; many fine and medium interstitial and tubualr pores; plentiful, very fine, fine and medium roots; no clay films; no concretions; 76 percent gravel; gradual smooth boundary.

C1 16-29 inches. Light yellowish brown to yellowish brown (10YR 5.5/4) very gravelly silt loam, yellowish brown (10YR 5/6) moist; weak, medium granular structure; friable, nonsticky and slightly plastic; few fine and common medium pores; few very fine, fine and medium roots; no clay films; no concretions; 79 percecnt gravel; gradual smooth boundary.

C2 29-45 inches. Very pale brown (10YR 7/3) very gravelly silt loam, yellowish brown (10YR 5/4) moist; weak, medium granual structure; friable, nonsticky and nonplastic; few fine and common medium pores; few, very fine, fine and medium roots; no clay films; no concretions; 81 percent gravel.

Cr 45-55+ inches. Not sampled. Hard bedrock is estimated to occur around 60 inches on the average based on the road cuts.

Remarks: Very typical looking Minaloosa and dry Grand Fir/Pachistima site.

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Date: October 1978

| Sample No. | Horizon | Depth | pH paste | ECX10$^3$ | PW at Saturation | Available P | Sesquioxides | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Di-Citrate Fe | Extract Al | Pyrophosphate Fe | Extract Al |
| | | in | | mmhos/cm | % | ppm | % | | | |
| RW-12 | A11 | 3-4 | 6.4 | 0.3 | 94 | 39.0 | ND | ND | ND | ND |
| 13 | A12 | 4-9 | 6.4 | 0.3 | 80 | 32.0 | ND | ND | ND | ND |
| 14 | B2 | 9-16 | 6.4 | 0.2 | 52 | 4.8 | ND | ND | ND | ND |
| 15 | C1 | 16-29 | 6.4 | 0.1 | 56 | 3.2 | ND | ND | ND | ND |
| 16 | C2 | 29-45 | 6.3 | 0.2 | 56 | 2.3 | ND | ND | ND | ND |
| NS | Cr | 45-55+ | NS | NS | NS | NS | NS | NS | NS | NS |

| Sample No. | Exchangeable Ions | | | | Ext. Acidity | CEC | Base Saturation | OM | C | N | C:N | Soil Fraction | NaF pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ca | Mg | Na | K | H | | | | | | | | |
| | meq/100 gms | | | | | | % | % | | | ratio | | |
| RW-12 | 17.6 | 2.0 | 0.3 | 1.6 | 14.6 | 45.2 | 60 | 18.5 | 10.8 | 0.22 | 49 | 0.16 | 7.9 |
| 13 | 11.8 | 1.7 | 0.3 | 1.8 | 12.2 | 32.3 | 56 | 12.4 | 7.2 | 0.26 | 28 | 0.16 | 8.1 |
| 14 | 6.1 | 1.2 | 0.3 | 1.3 | 8.3 | 18.8 | 52 | 3.0 | 1.8 | 0.10 | 18 | 0.24 | 7.7 |
| 15 | 5.4 | 1.1 | 0.3 | 1.6 | 7.3 | 15.5 | 54 | 1.4 | 0.8 | 0.06 | 13 | 0.21 | 8.1 |
| 16 | 4.7 | 1.1 | 0.3 | 0.8 | 5.7 | 12.3 | 55 | 0.7 | 0.4 | 0.04 | 10 | 0.19 | 8.0 |
| NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

Remarks: CEC - 10% acidified NaCl leachate ran on Technicon
Total N - ran on Technicon
NS - no sample
ND - not determined

Analysis by: Debbie Hall

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| Depth | Particle Size Distribution (mm) | | | | | | | | Gravel & Stone | | Textural |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | VCS | CS | MS | FS | VFS | TS | TSi | TC | > 2 mm | | |
| | 2-1.0 | 1-0.5 | 0.5-0.25 | 0.25-0.1 | 0.1-0.05 | 2-0.05 | 0.05-0.002 | < 0.002 | wt. | vol. | Classes |
| in | % | | | | | | | | % | | |
| 3-4 | 4.07 | 2.96 | 1.62 | 3.37 | 5.89 | 17.91 | 66.20 | 15.89 | 84 | †70 | V. gr. silt loam |
| 4-9 | 6.01 | 4.16 | 2.03 | 3,93 | 5.24 | 21.36 | 63.17 | 15.47 | 84 | 72 | V. gr. silt loam |
| 9-16 | 3.98 | 4.75 | 2.51 | 4.25 | 7.13 | 22.61 | 63.54 | 13.84 | 76 | 63 | V. gr. silt loam |
| 16-29 | 2.18 | 3.16 | 1.69 | 3.81 | 8.17 | 19.00 | 66.51 | 14.49 | 79 | 65 | V. gr. silt loam |
| 29-45 | 2.75 | 3.45 | 2.14 | 4.37 | 9.79 | 22.50 | 66.01 | 11.49 | 81 | 69 | V. gr. silt loam |
| 45-55+ | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

| Depth | Silt Size Distribution (mm) | | | Bulk | Water Content | | | | Plastic | Plastic |
|---|---|---|---|---|---|---|---|---|---|---|
| | CoSi | MSi | FSi | | 3 | 1/3 | 15 | 5 | Limit | Index |
| | 0.05-0.02 | 0.02-0.005 | 0.005-0.002 | Density | Bar | Bar | Bar | Bar | | |
| in | % | | | g/cc | % | | | | % | |
| 3-4 | | | | †1.2 | 24.7 | 49.3 | 24.7 | 20.7 | | |
| 4-9 | | | | 1.3 | 19.2 | 39.3 | 18.4 | 16.2 | | |
| 9-16 | | | | 1.4 | 13.1 | 27.2 | 11.9 | 11.5 | | |
| 16-29 | | | | 1.3 | 11.8 | 30.6 | 11.8 | 12.2 | | |
| 29-45 | | | | 1.4 | 10.9 | 34.1 | 10.5 | 11.4 | | |
| 45-55+ | | | | NS | NS | NS | NS | NS | | |

Remarks: Centrifuge method, 5% sodium hexametaphosphate added, sonified.
NS - no sample
† - estimated field bulk density and % volume on whole profile.

Analysis by: Debbie Hall
Anita Falen - 1/3, 3, 5, & 15 Bar